

### **ABSTRACT OF THE DISCLOSURE**

A method is disclosed for applying a metallurgical coating to a superalloy substrate that includes the steps directing a water jet having a sufficient pressure against the surface of the superalloy substrate for a sufficient time period to modify the surface morphology of the substrate in a such a manner so that the surface roughness and surface volume of the substrate are increased at a microscopic and macroscopic level, and depositing a metallurgical coating on the modified surface of the substrate using a high velocity oxygen fuel spray.

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